E-Cigarettes: A Dangerous Trend

The growing popularity of vaping devices is putting teens’ health at risk.

FEWER TEENS ARE SMOKING cigarettes than ever before. But in recent years another trend has replaced it. More middle and high school students now use electronic cigarettes than any other nicotine-containing product. In fact, according to a recent National Institutes of Health study, nearly a third of 12th-graders reported using vaping devices within the past year.

This trend has health officials concerned. Even though e-cigarettes are believed to be safer than tobacco, scientists know very little about the risks associated with them. After all, they have only existed for about 15 years. Most troubling: Almost all e-cigarettes contain nicotine, the same highly addictive chemical found in tobacco cigarettes.

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What Are E-Cigarettes?

Also known as e-vaporizors or vape pens, e-cigarettes are battery-operated devices. Some look like tobacco cigarettes, but many designs look like everyday items such as pens or USB sticks. The devices often include replaceable cartridges or “pods,” which contain a liquid that is a mix of different chemicals, such as flavor compounds and, in most cases, nicotine. When a person puffs on the device, called “vaping,” the liquid inside is heated into a vapor that is inhaled.

Steam vs. Smoke

The scariest part of the vaping trend is that teens don’t perceive e-cigarettes to be hazardous to their health. This could be because e-cigarettes produce vapor instead of harsh smoke like traditional cigarettes do. Some even have candy-like flavors.

Incredibly, there was once a time when people didn’t know the dangers of tobacco cigarettes. Up until the 1950s, doctors were frequently shown in ads promoting smoking. Now we know that tobacco smoke contains thousands of chemicals, including at least 70 known to cause cancer. It’s also responsible for 480,000 U.S. deaths each year.

That’s why health officials fear what we don’t know yet about vaping. E-cigarettes are still so new that scientists haven’t had time to determine all of their effects. Recent studies have revealed that some e-cigarette vapor contains cancer-causing substances. In addition, some e-cigarettes release other toxic materials, such as cadmium, a metal that can cause breathing problems.

They’re Just as Addictive

One important risk we do know: Like tobacco, most e-cigarettes contain the highly addictive chemical nicotine. In fact, one cartridge can contain as much nicotine as a whole pack of tobacco cigarettes!

Scientists have found that people who use nicotine have a high chance of becoming addicted to it. This
is especially true for teens, who are at a higher risk of addiction than adults. Studies have shown that nicotine’s effect on teens may make them more vulnerable to becoming addicted to other drugs too.

There is conclusive evidence that completely switching from traditional cigarettes to e-cigarettes provides health benefits to adults who already smoke. That’s only because tobacco cigarettes are even less safe than e-cigarettes. E-cigarettes are not safe, however, for nonsmokers or teens. E-cigarettes can lead teens to use tobacco cigarettes. In a recent study, 30 percent of teen e-cigarette users started smoking tobacco cigarettes within six months of vaping for the first time, compared with only 8 percent of those who didn’t vape.

What’s Next?

Health officials are beginning to increase regulations on the devices to help keep teens safe. In most states, it is illegal to sell e-cigarettes to people under the age of 18, but teens are still getting them anyway. Officials are also cracking down on retailers who sell to teens illegally as well as on companies that are marketing e-cigarettes to young people.

Scientists are continuing to learn about the health effects of e-cigarettes. But there is already enough evidence about the dangers of e-cigarettes to make one thing clear: Using them is not worth the risk for teens.

E-cigarettes can lead teens to use tobacco cigarettes.”

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From Scholastic and the scientists of the National Institute on Drug Abuse, National Institutes of Health, U.S. Department of Health and Human Services
E-Cigarettes: A Dangerous Trend

Teens now use e-cigarettes more than any other nicotine-containing product. While e-cigarettes are less harmful than tobacco cigarettes for adult smokers, most versions pose a great risk to teens because they contain the same addictive nicotine found in cigarettes. One cartridge can contain as much nicotine as a pack of cigarettes. By sharing the article “E-Cigarettes: A Dangerous Trend” and teaching this lesson and activity, you’ll help students learn why e-cigarettes aren’t harmless.

Critical-Thinking Questions

1. How are e-cigarettes similar to tobacco cigarettes? How are they different? (Both tobacco cigarettes and most e-cigarettes contain nicotine. E-cigarettes produce a vapor that contains nicotine and other chemicals, such as flavor compounds. Cigarettes release a toxic smoke that contains thousands of chemicals, roughly 70 of which are known to cause cancer. There is evidence that some e-cigarette vapor also contains cancer-causing chemicals.)

2. What health risks do e-cigarettes pose? Cite scientific evidence from the text to support your answer. (Most vaping devices contain nicotine, which is highly addictive. Using the drug can lead people to become addicted, which may cause them to use other nicotine-containing products, like tobacco cigarettes. Evidence shows that teens who vape are more likely to begin smoking. There is evidence that nicotine addiction may make teens more vulnerable to other drug addictions. There is some evidence that e-cigarette vapor also contains cancer-causing chemicals as well as toxic metals like cadmium, which can cause breathing problems.)

3. Why is it important that scientists continue studying the health effects of e-cigarettes? (The devices have existed for only about 15 years, so little is known about the long-term health effects of the devices. The history of smoking shows that it can take a long time to gather evidence about how dangerous using a drug or other substance is to your health.)

Writing Prompts

Grades 6–8 Are e-cigarettes safer than traditional tobacco cigarettes? Cite evidence to support your answer.

Grades 9–10 Should e-cigarettes be illegal for teens? Cite evidence from the text to support your answer.

Grades 11–12 You read that scientists don’t know all of the risks associated with e-cigarettes. How do you think this uncertainty should affect how the devices are regulated?

Paired Reading


This paired text describes a teen’s investigation into how e-cigarettes can damage the lungs.

Writing Prompt Vaping devices don’t release smoke like cigarettes do. Does that make them safe? Use text evidence from “E-Cigarettes: A Dangerous Trend” and “Teen Researcher Asks: Why Do E-Cigs Harm the Lungs?” to support your answer.

Activity Sheet Answers

1. Middle school: Roughly .5% to 3% or by 2.5%. High school: Roughly 2% to 12% or by 10%.

2. E-cigarette use is higher in high school. Answers will vary but may include that older students might have easier access and greater exposure to the devices.

3. You would expect the number of teen smokers to increase over time if e-cigarette use makes a person more likely to smoke cigarettes.

4. Answers will vary but should include reference to the top reasons students use e-cigarettes. Programs aimed to reduce marketing to teens may help. Other actions may include informing people that e-cigarettes have some of the same health risks as cigarettes.
Who Is Vaping?
Study the following data about e-cigarette use in teens. Then, along with the information in the article, answer the questions that follow.

PERCENTAGE OF STUDENTS WHO REPORTED USING CIGARETTES OR E-CIGARETTES

Top reasons for e-cigarette use among middle and high school students:

1. Friend or family member used them
2. They are available in flavors such as mint, candy, fruit, or chocolate
3. Belief that they are less harmful than other forms of tobacco, such as cigarettes
4. To try to quit using tobacco products, such as cigarettes
5. They can be used in areas where other tobacco products, such as cigarettes, are not allowed

Answer these questions on a separate sheet of paper as necessary.

1. By roughly how much did the percentage of middle school students who use e-cigarettes increase between 2011 and 2017? How much did it increase for high school students in the same period?

2. In which population of students is e-cigarette use higher? Why do you think that is?

3. In the article, you read about data that suggests people who use e-cigarettes are more likely to start smoking. If that theory is correct, how would you expect the data in the graphs to change over time?

4. In the article, you read about some of the ways officials are trying to reduce teen vaping. Do you think these prevention efforts will be successful? Cite evidence to support your reasoning. What additional actions would you recommend?
Dear Teacher,

The vocabulary list on the following pages is drawn from the “E-Cigarettes: A Dangerous Trend” student article and the “Who Is Vaping?” activity sheet. It can be previewed with students prior to reading or reinforced with students afterward. Encourage students to incorporate these words into their discussions and writings.

The list integrates vocabulary words that would be used across several content areas, such as reasoning, regulation, and theory, as well as domain-specific words, such as addictive, nicotine, and vapor.

Some suggestions for students to help their understanding include:

- organizing concept maps that include word parts, synonyms, antonyms, and examples
- composing memory aids that explain the words or use them in a meaningful context
- employing the words to create newspaper articles, stories, or poems

Sources: Unless otherwise noted, definitions below are sourced or adapted from:

Merriam-Webster Collegiate Dictionary
Scholastic Children’s Dictionary

Supplement for: “E-Cigarettes: A Dangerous Trend”

- Student Article: [scholastic.com/headsup/ecigarettes](http://scholastic.com/headsup/ecigarettes)
addiction (noun): a brain disorder or illness associated with compulsive (uncontrollable) behavior, such as drug use, despite negative consequences

addictive (adjective): something, such as a drug, that causes changes to the brain, resulting in compulsive (uncontrollable) behavior despite negative consequences

associated (adjective): related, connected, or joined together

benefit (noun): something that gives you an advantage or helps you

cadmium (noun): a toxic metal often used in batteries

cancer (noun): a disease in which abnormal cells grow out of control and invade normal tissue in the body

cartridge (noun): a container, usually changeable, for holding substances (such as liquids) that are otherwise difficult or awkward to handle

chemical (noun): a substance that is made by a chemical process or used for producing a chemical effect

compound (noun): a substance made of two or more elements

conclusive (adjective): proving something, or putting an end to a debate or question

data (noun): factual information used as a basis for making conclusions

determine (verb): to find out through investigation or reasoning

device (noun): something made for a specific purpose or to have a specific function

electronic cigarette (e-cigarette) (noun): a device, often shaped like a cigarette, that uses a battery to heat up a liquid that usually contains nicotine, so that it can be inhaled

evidence (noun): something that gives proof or a reason to believe something

exist (verb): to be real or alive

frequently (adverb): happening often or at short intervals

harsh (adjective): causing a painful or unpleasant reaction

hazardous (adjective): dangerous

inhale (verb): to breathe in

market (verb): to promote or sell a product

nicotine (noun): the chemical found in tobacco that is addictive

operate (verb): to cause to function

perceive (verb): to consider something as being a certain way

percentage (noun): a part of a whole based on a total of one hundred parts

pod (noun): an easily replaceable cartridge in a vape pen

population (noun): a group of people who have a quality in common

prevention (noun): the act of keeping something from happening or existing

promote (verb): to encourage people to purchase or accept something
provide (verb): to supply or make available

reasoning (noun): the process of making conclusions based on facts or reason

recommend (verb): to suggest something as being good or worthy

reduce (verb): to make smaller in size, amount, or number

regulation (noun): an official rule that deals with details and procedures, such as those that make sure something is safe

release (verb): to set something or someone free

replaceable (adjective): able to be removed and have something new put in its place

report (verb): to present a statement or an account of something

responsible (adjective): being the cause or explanation for something

retailer (noun): a person or business that sells goods

reveal (verb): to make known

risk (noun): the possibility of loss or injury; danger

substance (noun): a material with a specific chemical makeup

theory (noun): an explanation of something based on reasonable and scientifically acceptable ideas

tobacco (noun): a plant with sticky leaves that are chewed or smoked

toxic (adjective): containing poisonous material that can cause harm or death

trend (noun): the current style or preference

troubling (adjective): causing feelings of worry

vape (verb): to inhale and exhale vapor from an electronic cigarette or vape pen

vape pen (noun): a device that uses a battery to heat up a liquid that usually contains nicotine, so that it can be inhaled

vapor (noun): a gas formed from something that is usually in a liquid or solid state

vulnerable (adjective): able to be hurt or damaged